

REMARKS

Claims 1-13 are now pending in the application. Claims 14-20 are cancelled. The Examiner is respectfully requested to reconsider and withdraw the rejection(s) in view of the amendments and remarks contained herein.

DRAWINGS

The drawings stand objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "114" and "110" have both been used to designate for a package lid and the integrated package and characters "212" and "214" have both been used to designate for a package lid. This rejection has been accommodated.

The attached sheets of drawings include changes to Figures 2 and 3. With regard to Figure 2, the lead line and arrow point for reference numeral 110 has been modified to better indicate that it refers to the integrated circuit package and not just to the package lid 114. With regard to Figure 3, the lead line for reference numeral 212 has been extended to properly refer to the substrate. The attached sheets, which includes Figures 2 and 3, replace the original drawing sheets.

The drawings stand objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the additional component must be shown or the feature(s) canceled from the claim(s). Applicants respectfully traverse this rejection.

At page 8, lines 1 and 2, the specification expressly states that the heat sink 140 is an additional component with respect to the preferred embodiment as illustrated in Figure 2. Thus, Applicants respectfully assert that the additional component of the claims is properly illustrated in the drawings as required by 37 CFR 1.83 (a).

REJECTION UNDER 35 U.S.C. § 112

Claims 2 and 4-5 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. This rejection is respectfully traversed, accommodated and/or rendered moot.

Claim 2 has been amended herein to delete the “or between two components of the support frame” language from the claim. Claim 5 has been amended to replace “a support frame” with “the support frame” to clarify that it is the same support frame of Claim 1, line 4.

With regard to Claim 4, as discussed above with respect to the drawings, the specification at page 5, lines 1 and 2 expressly states that the heat sink 140 already illustrated in the drawings is an additional component with respect to the preferred embodiment as illustrated in Figure 2. Thus, Applicants respectfully assert that Claim 4 currently satisfies the requirement of 35 U.S.C. § 112, second paragraph.

REJECTION UNDER 35 U.S.C. § 102

Claims 1-4, 6 and 8-10 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Akram et al. (U.S. Pat. No. 6,165,817). This rejection is respectfully traversed.

Independent Claim 1 recites “a vibration or shock to the base component must travel through the isolation material prior to reaching the circuit component.” Similarly, independent Claim 8 recites “a vibration or shock to the circuit board must travel through the isolation material at the attachment point prior to reaching the integrated circuit.”

In contrast, this rejection refers to tape 224, adhesive 233 and/or adhesive layer 244 of Figure 3 of Akram et al. as the claimed isolation material, to conductive traces 226 as the claimed support frame, to substrate 250 as the claimed circuit component (or integrated circuit) and to support 230 as the base component (or circuit board). However, a vibration or shock to support 230 of Akram et al. can still reach the circuit component 250 by traveling through the cited Akram et al. support frame (i.e., conductive traces 226).

Moreover, adhesive layers 233, 232, and 244 are apparently used to rigidly connect the tape (224/266) of Akram et al. to both substrate 250 and support 230. These adhesives of Akram et al. are disclosed as being alternatively, dielectric, thermoset or thermoplastic. Thus, none of these adhesive layers are disclosed or suggested as providing any vibration or shock isolation. Consequently, a shock or vibration applied to the cited substrate (support 230) of Akram et al. reaches the cited circuit component (substrate 250) of Akram et al. without passing through any shock or vibration isolation material. Consequently, Applicants respectfully assert that Akram et al. does not disclose or suggest Applicants' invention as defined by independent Claims 1 or 8. Since the remaining claims (Claims 2-7 and 9-12) depend from one of these independent claims, either directly or indirectly, they are likewise patentable for at least the reasons discussed above.

REJECTIONS UNDER 35 U.S.C. § 103

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Akram et al. (U.S. Pat. No. 6,165,817) in view of Mahulikar (U.S. Pat. No. 5,103,292). Claims 7 and 11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Akram et al. (U.S. Pat. No. 6,165,817) in view of Ohbuchi et al.

(U.S. Pat. No. 5,719,746). Claim 12 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Akram et al. (U.S. Pat. No. 6,165,817) in view of Patel (U.S. Pat. No. 5,587,882). Claim 13 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Akram et al. (U.S. Pat. No. 6,165,817) in view of Yasukawa et al. (U.S. Pat. No. 5,793,106). These rejection are respectfully traversed.

Each of these rejections relies upon the disclosure of Akram et al. with respect to the claimed isolation material. As discussed above, Akram et al. does not disclose an isolation material wherein a vibration or shock to the base component (or circuit board) must travel through the isolation material prior to reaching the circuit component (or integrated circuit). None of these secondary references provide the disclosure or suggestion discussed above as missing from Akram et al. Consequently, Applicants respectfully assert that none of these references, either singly or in combination, disclose or suggest Applicants' invention as claimed.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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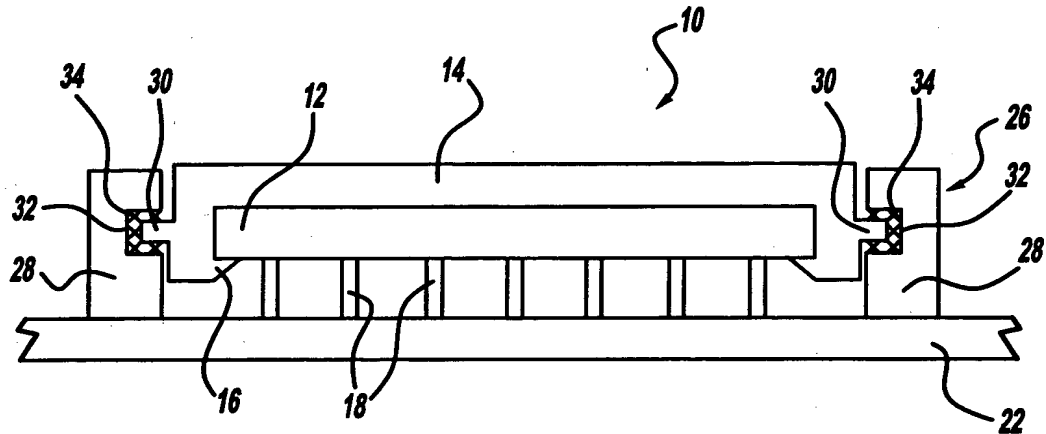


Figure - 1

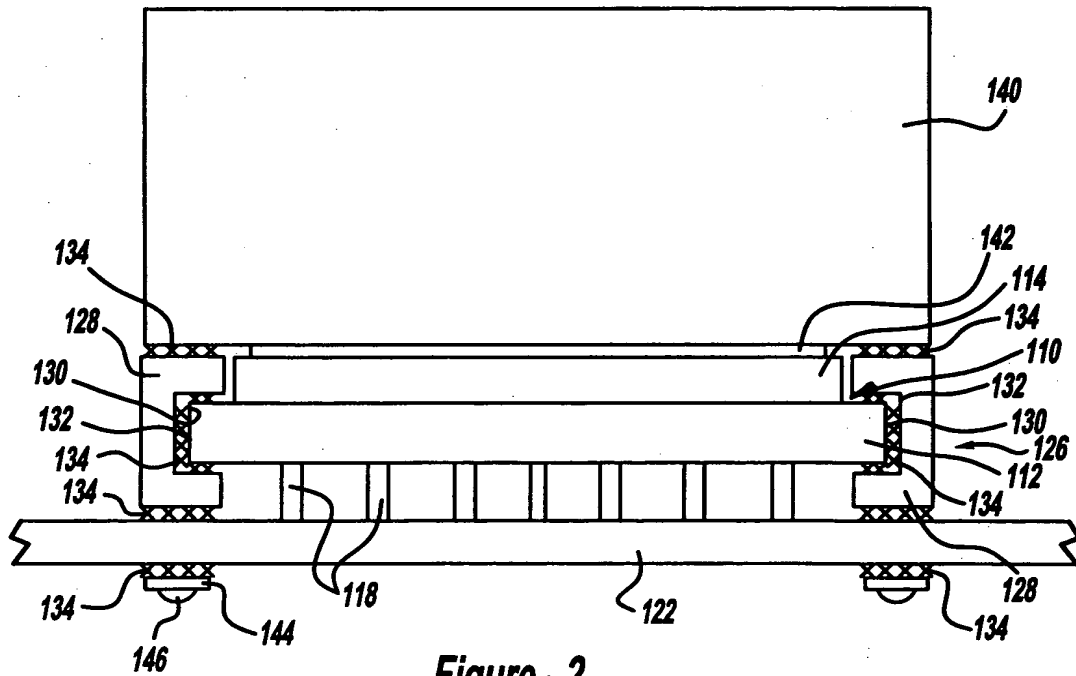


Figure - 2

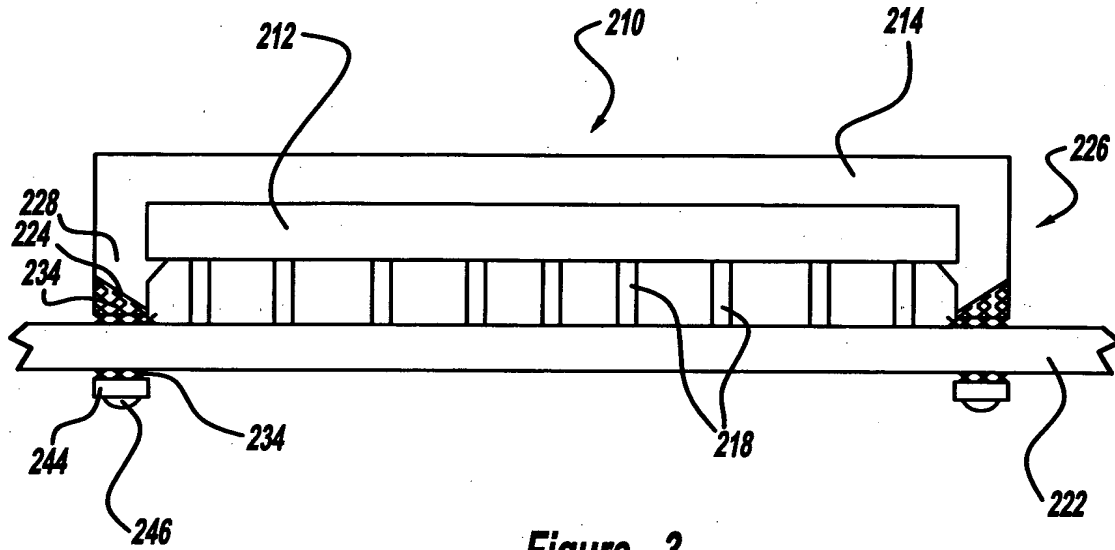


Figure - 3